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ABSTRACT

A three-year study of the linguistic and metalinguistic performance of forty Mexican-American children ranging in age from three to eleven years shows that it is useful to characterize the competence of the bilingual in terms of a unified system of rules, at least at one level of analysis. This paper explores some aspects of the grammatical competence underlying the code-switched discourse of these children. The data include tape-recorded naturalistic conversations, the children's imitations of an artificially constructed set of code-switched sentences, acceptability judgements of code-switched sentences, judgements of whether a code-switched utterance is mostly Spanish or English, and elicited code switches. Results show that certain syntactic conditions governing code-switching are part of the grammatical competence of all of the bilingual children studied, while others appear to be idiosyncratic. Topics discussed include: (1) relative frequency with which different grammatical classes of words are code-switched; (2) the effect of code-switching upon certain movement rules; (3) non-switchable elements; (4) morphological boundaries' effect upon code-switching; and (5) ellipsis in code-switched comments or responses to questions. Results may vary according to the age at which the two languages are acquired and the stage of language acquisition reached by the individual in both languages. (Author/CLK)

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ASPECTS OF THE SYNTAX OF THE CODE-SWITCHED DISCOURSE OF BILINGUAL CHILDREN

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Linguists have demonstrated the usefulness of formulating a set of rules called competence to account for both judgements about and and production of language by the monolingual. In a three year study of the linguistic and metalinguistic performance of forty Mexican-American children ranging in age from three to eleven years, we have found that it is also useful to characterize the competence of the bilingual in terms of a unified system of rules, at least at one level of analysis. This paper explores some of the aspects of the grammatical competence underlying the code-switched discourse of these children and suggests some principles which may be helpful in analyzing such data.

The data for our analysis are (1) tape recorded naturalistic conversations, (2) the children's imitations of an artificially constructed set of code-switched sentences, (3) acceptability judgements of code-switched sentences, (4) judgements of whether a code-switched utterance is mostly Spanish or English, and (5) elicited code-switches.

The question of whether or not there are in fact any syntactic limits on where code-switching may occur is a matter of some controversy. Gingras, in an article dealing with adult Chicano versus (Spanish-speaking) non-Chicano acceptance of code-switched sentences of different syntactic types, states that "There seems to be a set of rules or constraints that are operative, and in order for a person to code switch effectively, he must control these constraints." Gingras' sentences produced a strong common feeling of acceptance or rejection among his Chicano sample. The percentage of acceptance was always on the order of 90% to 100% for some sentences and 5% to 11% for others.

Yet, other research has viewed code-switching as a phenomenon unanalysable at the syntactic level. Donald Lance, for example, concludes that "The variety found in these sixteen citations suggests that there are perhaps no syntactic restrictions on where switching can occur, for it takes place in the following environments..." Lance proceeds to list eleven "environments" which he hints are mutually contradictory at the syntactic level. He is essentially claiming that an effective code switch cannot be

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defined syntactically. Furthermore, in its strongest form this claim would predict that the bilingual should be capable of easily producing utterances such as 1-A or B where every other word has been switched.

1. A.?Yo found un good libro in la library.
   B.?I encontré a buen book en the biblioteca.

In fact, this sort of sentence is extremely difficult for the children we worked with to repeat, and it is never spontaneously produced. We have even tried to get the children to count while alternating languages on successive numbers, and it is a nearly insurmountable task for them. The children who finally did manage to count in this manner grouped pairs of numbers of opposite language (as in 2), which suggests that one or the other number in each group may have been treated according to the rules of effective switching.

2. A. Uno two...tres four...cinco six...siete eight...etc.
   B. One dos...three cuatro...five seis...seven ocho...etc.

We attempted several ways of exploring whether there were in fact any syntactic limitations upon the code-switching of the children. Our earliest procedure was simply to ask whether a particular test sentence sounded "funny" or "OK". This method provided us with some data but ultimately proved to be unsatisfactory because individual reasons for the judgements varied widely and were not limited to linguistic judgements. Some children even rejected sentences they had been observed to have uttered, because "there's Spanish with English in it". A certain stigma is surely associated with intra-sentential code-switching in particular among these children; they do not generally enjoy having their bilingual talents called to their attention.

We then constructed a set of 28 sentences containing a wide variety of code switches and read each one to a child asking him first to repeat the sentence, then to go into the next room and repeat it to another researcher. All of this activity was tape recorded. Only the second repetitions following a short period of delay were used in tabulating the data. We expected that each of the 20 children participating would reprocess the sentences to conform with his or her own rules for code-switching during the time it took to walk into the next room to repeat them. We feel that to a large extent this is exactly what did happen, and we will attempt a summary here of a rather large body of data.

The four sentences of 3 are syntactically representative of several in the set of test sentences:

3. A. El ratón chewed the table. (75%)
   B. The bird made un nido. (70%)
   C. The girl pegó a su hermano. (40%)
   D. El hombre quemó the papers. (30%)

(Percentage of children repeating sentence exactly.)

In 3-A and C the subject NP has been switched in English and Spanish sentences respectively, while in 3-B and D the object NP is in the opposite language. In general, errors were in the direction of using a determiner of the same language as the verb. It should be noted that none of the children made the mistake of translating only the noun in each NP. In other words, no one said, "the chica, el mouse, the papeles, un nest". The total lack of such logically possible combinations from such a testing procedure strikes us as a characterization of anything but a random phenomenon.

The sentences in 3 above were most often changed by the children to contain a code-switched noun rather than an entire noun phrase: "El hombre quemó los papers" etc. Note that while the English sentences with Spanish noun phrases (3-A & B) were repeated exactly by 75% and 70% of the children, the opposite type, Spanish sentences with English noun phrases (3-C & D) were repeated exactly by only 40% and 30% respectively. One interpretation of these data could be that for these children full NP code-switches to English are less commonly made than are full NP switches to Spanish when speaking English. Our recorded naturalistic data bear this interpretation out. The only real cases we have observed of the type of code-switch characterized by 3-C and D are from very young children or, of course, special expressions brought in their entirety from English, as in 4-A and B.

4. A. ...pero es a worm... (3 year old child)
   B. ...y mañana va a salir con este...the Osmonds

However, it must be noted here that our experience with Spanish speaking non-Chicanos (speakers of English as a second language) indicates that they may prefer to use full NP switching when speaking English. Sentences such as "I want to get un carro nuevo" are apparently not uncommon in their discourse, whereas English dominant speakers of Spanish seem to feel more comfortable with "I want to get a carro nuevo". In any event, individuals do have fairly strong intuitive notions of which one is better.

The fluent bilingual Chicano child, on the other hand, appears to take both syntactic systems into account equally when switching

codes rather than favoring one or the other. For the fluent bilingual, two disparate linguistic systems are managed separately or blended, according to need--the results are far from chaotic.

The percentages in 5-A and B are typical of what happened when we asked the children to repeat sentences whose only code switched elements were the determiners in subject and object NP's.

5. A. The gato rasguñó the muchacho. (12%)
   B. La cow ate el grass. (11%)

(Percentage of children repeating sentence exactly)

These were nearly impossible for the children to repeat. In 5-A, 89% switched one or both articles to Spanish, and in 5-B 88% used an English article for at least one of the nouns. In both cases, where only one article was changed, it was most often the object NP that was put into the language of the verb. The percentages cited in example 3 reflect this same pattern, though not so clearly.

Looking only at the four noun phrases of 5-A and B in isolation as in 6 below, there is basically nothing wrong with their bilingual form.

6. A. the gato C. la cow
   B the muchacho D. el grass

However, 6-A and B must appear in English discourse, while 6-C and D must be in Spanish discourse in order to be acceptable. When the converse is tried, as in 5-A and B, one must assume that neither English nor Spanish nor an acceptable mixture of the two is being spoken. If the verb in 5-A had been English, and that of 5-B Spanish, as in 7-A and B, then we might expect the resulting sentences to be very easy for the children to repeat. We might also expect them to perceive 7-A as a sentence appropriate for English discourse, and 7-B as a sentence mostly in Spanish.

7. A. The gato scratched the muchacho.
   B. La cow se comió el grass.

These sentences were not given as test items, but several simple noun code-switches parallel to them were used. Three examples are given in 8:

8. A. Mi hermana me dio una cracker. (100%)[1]
   B. Ella me dio un wagon azul en la manana. (100%)
   C. El boy bad quebro una window. (100%)

Various minor errors in gender, for example, were recorded, but it is important to note that no mistakes were made by changing only the determiner to English, i.e. "a cracker, a wagon, a window". The two children who used an English determiner also used an English verb.[2]

Similarly, the NP "una verde shirt" in 9 was remembered by only 20% of the children tested.

9. My brother gave me una verde shirt for Christmas. (20%)

All of the many variations on 9 produced by the children contained the English determiner "a"; none contained "camisa", the Spanish for "shirt". All of the children who successfully repeated a noun phrase with "una" used the original text without variation, namely, "una verde shirt". This may be an indication that they were merely good at memorizing, since no less than seven adjectives were used by other children: "new, green, grey, reddish, red, verde, new verde". It is apparent that for the majority "una verde shirt" may not occur as a noun phrase in an English sentence. Two children actually translated the entire first part of the sentence in order to make "una verde shirt" fit: "Mi hermano me dio una verde shirt for Christmas." In short, there appears to be a strong affinity between the verb and determiners (that of the object NP in particular) where language choice in code-switching is concerned.

On the other hand, there seems to be less of an affinity between an adjective and the verb, for fully 100% of the children had no difficulty in repeating 10 with a Spanish verb and an English adjective.

10. A. La señora lleva un blue vestido. (100%)
B. El muchacho tiene un carro red. (100%)

Mistakes such as "una blue vestido" or "un red carro" were observed.

In the case of 11, again 100% of the children this time used the Spanish adjective and English verb.

11. I got a bicycle roja para mi birthday. (100%)

Parallel to 11, we have observed the children producing, for instance, "I want a motorcycle verde", and it seems that there is generally a preference for placing the adjective according to the placement rules of the language of the adjective, not that of the sentence.

This preference is not so surprising if we view the matter as outlined in 12:

12. { A. I want {a / *un} . B. Yo quiero {un / *a} } . { car / car verde / carro verde / green carro / green car / carro }

That is, all choices of adjective/noun combinations acceptable in Spanish are acceptable in English as well, provided the proper determiner is used. Unacceptable or unlikely combinations as shown in 13 are similarly unacceptable, to varying degrees, in sentences of either language. We view the paradigm in 12 as the bilingual way around code-mixing, but language dominance factors may create a preference for one of the choices offered by 13.

13. { A. I want {a / un} . B. Yo quiero {un / a} } . { *carro green / *verde carro / *car green / *verde car }

If it were not for the condition upon adjective movement that causes the rule of the language of the adjective to move the adjective, then there would be two completely distinct surface sets of noun phrases needed when code-switching in Spanish or English. We would even have every reason to expect "Yo quiero un car green" if the adjective were placed according to the movement rule of the sentence language. This principle, it seems to us, would be a totally unnecessary complication of the grammar of code-switching for bilingual individuals who have mastered both syntactic systems.

There are many syntactic environments of this sort where a conflict between the two systems of grammatical rules is resolved by a principle rather than a random mix. It must be noted, however, that such principles are at times violated in the manner in which performance differs from competence in any linguistic system, but they tend to create segments which are acceptable in either language. It must also be said that the data seem to reflect individually distinct competence models as well.

We have attempted to show that the acceptability of a particular noun phrase is not determined in each language by restrictions on the code of each of the elements, but rather an acceptable code-

switched NP is marked for either Spanish or English usage by the code of the determiner. "Un car", for example, is a Spanish NP. A cross-linguistic principle relating to adjective placement then insures that the internal syntax of the NP will not be violated. Even the lack of a surface determiner may mark an acceptable code-switch as in the English generic sense of 14.

14. A. I like Ø arroz.
    B. *I like the arroz.
    C. *I like el arroz.

Of course, the reverse is true for a code-switched NP marked for use in a Spanish sentence, as in 15.

15. A. Me gusta el rice.
    B. *Me gusta Ø rice.
    C. *Me gusta the rice.

Mistakes are certainly not unheard of among the children, but the starred type B and C sentences of 14 and 15 are generally rare in the discourse of the more fluent bilinguals.[3]

We view the production of bilingual utterances as a surface manifestation of two distinct phenomena: code-mixing and code-changing. Taken together, these two phenomena constitute what is generally termed code-switching.

The data we have dealt with so far are all examples of effective or ineffective code-mixing. Code-mixing is characterized at times by conflicts between the grammatical systems involved; these conflicts are resolved generally by syntactic principles which take both systems into account in various ways. Code-mixed sentences are felt to be sentences primarily of either Spanish or English, and are so distributed in discourse.

There seems to be a strong constraint in code-mixing of Spanish and English against using derivational suffixes on verbs, for instance, of the opposite language, unless the stem has been adapted phonologically. So, while we have observed "yo tinqué" (I think+ed); "yo caché" (I catch+ed); and "está chiteando" (he's cheat+ing), we have never heard the children using forms such as "yo thinké" or "I cogéd", where simple lexicalization could be ruled out. However, between the auxiliary and main verb, in the present progressive at least, mixing may occur as in 16.

16. A. Patty: Estaba teaching us en kinder.
B. Teresa: It sounds funny when you're grabando.
C. Leti: 'Tá working allí.

Clitic attachment appears to be ruled out in Spanish sentences just in case the participle or infinitive is in English. Only an English clitic may follow these elements. However, the Spanish alternative of pre-positioning clitics in such cases produces only Spanish object pronouns, as in 17, A and B, D and E.

17. A. Estaba teaching {us / *nos}
B. {Nos / *Us} estaba teaching.
C. ...when you're grabando {lo / *it}
D. Voy a hit {him / *le}
E. {Le / *Him} voy a hit.

It would seem that the forms *teachingnos, *grabándoit, *hitle are ruled out for much the same reasons mentioned concerning tense endings.

The fact that a person cannot remember a word in one language and so uses a word from the other is only one of a myriad of reasons why the bilingual mixes codes. English words and expressions which are used repeatedly in code-mixing often become a permanent part of the Spanish of bilingual children, and Spanish phonology may or may not affect the item, depending upon the child and the particular item. This single fact is responsible for a great deal of difficulty in separating code-mixing from lexicalization in the data. One child, for example, has individual phonological representations for "popcorn" in English and Spanish, /pópkɔrn/ and /pakón/ respectively, but she has been observed to use the latter Spanish form as a code-mix in an English sentence, as in 18.

18. Christina: Gimme pacón!
Jim: Pacón?!
Christina: Popcorn!!

None of the other children knew how to say "popcorn" in Spanish and so used the English pronunciation in Spanish discourse. "Pacón" just has not seemed to catch on.

A good example of a conflict created by code-mixing occurs in the following sentence spoken by an adult Mexican-American: "This gente make me mad..." The word "gente" is grammatically singular in Spanish, whereas "people" is plural in English, though not marked morphologically. This woman is totally at ease in either Spanish or English, and her resolution of this grammatical conflict would seem to reflect her fluency. The subject NP "this gente" is treated in much the same way as many English dialects would treat "this group of people". That is, even though the noun phrase is grammatically singular, it is used with a plural verb. Upon questioning, this woman maintained that "these gente" or "this gente makes" just would not sound right to her. It is important to note that NP internal syntax was preserved by using the singular "this" at the cost of strict grammatical agreement between subject and verb.

Now code-changing in contrast to code-mixing is often characterized by long segments of switched material, and it seems to entail a complete shifting of grammatical "gears", as it were. Code-changing may occur intra-sententially or between turns of speaking. When the code is changed from Spanish to English, for instance, it is an abrupt act which takes little or no account of the syntax of what went before, where reference of various types is concerned.

Instead, the code-changed portion of an utterance treats preceding opposite language material as if it had been in the same language. That is, in code-changing one appears to relate grammatically to a translation of preceding utterances or material. The recorded exchanges in 19 indicate that upon processing the utterance to which he will respond or add, the child very likely bases his response upon a sometimes faulty or literal translation of the original comment or question. The response is probably not a translation of a response in the same language as the comment.

19. A. J: Vénganse pa' fuera!
Everardo: We don't want to.

B. J: Bueno, quién quiere decirme los colores?
Christina: Not me!
J: Leti, quieres?
Patty: I do!

C. Ernesto: Luego dice, "Pon ese hombre abajo!", and he did.

D. J: Quién tiene el reloj?
Nico: I do.

E. J: Do you want some apple cider?
Ernesto: A mí no.

F. J: Cuántos años tienes? Dos?
Leti: She gots...he gots...
Patty: He's three.

G. J: Quién tiene hambre?
Patty: I do!
J: You do what?
Patty: I mean I am! I'm hungry!

Expressions such as those of 19-F and G are particularly troublesome for the children when it comes to responding in English. Many of the children are content to respond "I do" to "Quién tiene hambre?", though they would not say "I have hunger" or "I do be" or anything of the sort. This may be an indication that these children are attempting to mix codes where they should have used a principle of code-changing.

Another example of a code-change is given in 20.

20. Tibaldo: He had to coserle la his neck, and then they had a party, and Frankenstein came to the party.

It appears that this child started to use coser (sew) as a code-mixed item, included the object pronoun le, as we would expect, and for a moment nearly changed codes entirely by using the Spanish determiner la, which in this case would be equivalent to his in English. Apparently catching himself in the change, and wanting to keep his narrative in English, he backs up, repeats (or translates) part of the information in English where, of course, the determiner is not used in this sense. Just looking at the segment which could have been produced, "...coserle la neck", we feel that this would have constituted a code-change to Spanish, with a code-mixed noun, "neck".

Quite often a false start is in one language followed by a translated repetition of this part plus the rest in the other language.[4]

21. Patty: Roli, put that...ahí ponla en el zacate.

It seems that in 21 Patty changed her mind and decided to code-change to Spanish for some reason. Otherwise, she could have said, "Roli, put that en el zacate." Note that the change from "that" to "ahí...la" is not a literal translation. 22-A is a similar example.

22. A. Patty: Oh, cómo le...what is that new teacher's name?
B. Rosa M: Yeah, she only sabe como dijir[5]..ella nomás sabe como dijir Joe, porque el novio de ella es Joe.

In 22-B, Rosa may have felt the initial point of code change to be ineffective or pointless, and so begins again completely in Spanish.

Further examples of self-translation are given in 23, and they are typical of dozens we have recorded.

23. A. Ernest: Los spiders...las arañas dicieron que antes los babies nos...le gustaban.
B. Christina: Come on! Give me towel, la toalla.
C. Christina: What do you want? Cuál quieres?
D. Juan: What's wrong with that? Qué tiene de malo eso?
E. David: Yo sé, I know, yo sé una cancion.
F. Christina: Agárrale las manos y los pieses porque la vamos a bañar...we're gonna take a bath to her.
G. Hortensia: No juegan en la arena. Don't play sand.
H. Christina: Tú quieres a Joe. You like Joe.
I. Patty: Stay here Roli. Te quedas aquí.
J. Rosa P: Ya acabé...I'm done.
K. Teresa: Please don't..no me llamas por favor.
L. Christina: You(r) dog! Tu perro!

All self-translations seem to have in common that the hiatus between languages occurs at a major syntactic break, and the translated portion is always monolingual, most often followed by a lengthy monolingual or code-mixed utterance. We consider self-translations to be examples of code-changing. Code-changing back and forth is rare within one turn of speaking, but code-mixing may occur any number of times.

The boundary between Spanish and English in code changes often occurs between coördinate sentences. Whenever this happens, the conjunction is usually in the language of the second conjunct.

24. A. Leti: You know what? My malina's (madrina's) son me estaba calcando (cargando) y me tumbó, and it hurt.

B. Ernesto: And then, y luego...se lo llevó, y esta señora se llamaba...yo no sé cómo pero--it was a funny name (aside to audience)--and, y luego cuando, when they said her name the horses all went...

In 24-B it is as though Ernest does not know which language he wants to use, and he must constantly correct the conjunctions between changes. We feel that where the conjunction does occur in the language of the first conjunct, then a special stylistic purpose may have been called into play. Note that in sentence 24-B "yo no sé cómo pero--it was a funny name", the conjunction pero is followed by an English sentence. However, this English portion is said in a parenthetic voice indicating that it may have been detached from the disjunction set up by pero. This is much the same as when one interrupts oneself in an utterance such as "I'm going but...oh, I've changed my mind." The but is meant for some unfinished portion, not what was actually produced. It may be "erased" only by the intonation of the next sentence.

Questions concerning which language a particular utterance is in are relevant only for monolingual or code-mixed discourse. A code-changed sentence is in two languages. These conclusions are based in large part on the body of data collected by using a series of metalinguistic tasks. We attempted to find out whether there was any general agreement among the children concerning their judgements of which language utterances were in. Informal experimentation led us to believe that there was a high percentage of agreement with regard to Spanish sentences such as "Quiero ver esto de los dinosaurs," but as more and more and more words were put into English, the sentence suddenly became English with Spanish code-switches. Our aim was to shed some light upon when judgements are clear or unclear. As a tool, we used the children's judgements of whether a sentence was "mostly Spanish or mostly English."

First, however, we determined that they were capable of spotting Spanish words in English texts by playing taped stories and individual sentences with Spanish words and phrases inserted, and asking the child to ring a bell when he heard anything in Spanish. We tested the children in this manner separately and in groups. Generally speaking, the only Spanish words not noticed by the children were missed because of lack of attention or external noise. Several foreign words which were not Spanish were rather consistently reported to be Spanish. Any word, nonsense or otherwise,

given a Spanish trilled /r/, Spanish syllable timing, or non-schwa unstressed vowels caused many of the children to react with an indication that it was Spanish. Even some English words unknown to them were judged as Spanish. However, no common English words were mistaken for Spanish.

We then tried to factor out pronunciation from these judgements by taping a set of ten English sentences, some with one or two Spanish code-mixed words but phonologically adapted to English pronunciation. These sentences are given in 25 below.

25. (1) I was looking for that tall delgado teacher at school.
(2) Where did you conseguir your new watch?
(3) She spends a lot of time on the Atlantic playas.
(4) Roberto ganó a bike at the bazaar on Wednesday.
(5) I hate to despertar people when they're sleeping.
(6) After Badjina broke the ventana, he had to pay.
(7) John told me the cigüena brought him.
(8) I felt that his quid pro quo was not acceptable.
(9) Well, that is an eleemosynary matter for the bunko squad.
(10) The cortina was closed at the biblioteca when I arrived.

After hearing each taped sentence, the child was asked "What Spanish words did you hear?" Anglicizing the pronunciation of Spanish words caused the children some problems, but most Spanish items were noted by at least half of the 15 children tested. See 26 below. Bunko was perceived as the Spanish banco several times, but quid pro quo and eleemosynary were reported to be Spanish by only a few. Note that the inflected verb form ganó (won) was noticed by less than 50% of the children. This result may relate to the fact that such a code-mix is rare if not actually unacceptable. Similarly, delgado appeared in English position with respect to the noun; this may have caused most to miss it.[6]

26.

Sentence	Item	(%)
1	delgado	46%
2	conseguir	73%
3	playas	66%
4	gano	33%
	Roberto	26%
	bike	6%
5	despertar	60%
6	ventana	60%
	Badjina	26%
7	ciguena	66%
8	quid pro quo	6%

26 Cont'd.	9	bunko	46%
		eleemosynary	13%
	10	cortina	86%
		biblioteca	33%

Some of the comments by the children are worth mentioning here. Concerning sentence 7 Leti M. responded, "Yes, I can't say it, but it means cigüena (Sp.)", pronouncing cigüena (stork) as in Spanish. None of the children who said cigüena was Spanish knew what a cigüena was. Ernesto said of sentence 2, "Conseguir (Eng.), that's not conseguir (Sp.)! It's...consiguer (Sp.)! You said it wrong!" He was not so much correcting the pronunciation as he was pointing out our ignorance of his dialectal form. Several children remarked that the Anglicized pronunciation sounded "stupid" or "queer". Freddy said of sentence 6, "Yeah, Spanish word...broke the window." Only one child reported no Spanish at all in any of the ten sentences.[7]

From these and other less structured tests we obtained an idea of the children's ability to recognize and distinguish English and Spanish. We were satisfied that requests for the language of an utterance generally placed no unreasonable demands upon children of this level of linguistic sophistication. It is apparent that the phonetic shape of the word and its syntactic funtion are important factors in discerning Spanish from English and that the semantic content of a word is not crucially tied in with its recognition as Spanish or English. These topics could of course bear further research.

We then taped the set of code-switched sentences in 27 and played them for individual children asking each time, "Is this sentence mostly English or mostly Spanish?" All words were pronounced in the best respective accents the first author could muster.

27. (1) Oye, in the summertime vamos a nadar in the pool.
(2) Te gusta leer books about animals and plants?
(3) As soon as I llegué, sabía que I was in the wrong house.
(4) My friend John se casó con my cousin's boss.
(5) Sabías que my brother tuvo a set of hot wheels?
(6) Mira, my mother quiere cocinar these vegetables for supper.
(7) Este Alberto siempre quiebra his toys and everything he gets.
(8) Usually, when Juan is driving, anda muy rápido.
(9) Me llamó Mary yesterday en el teléfono.
(10) I planted radishes yesterday, y ya están creciendo.
(Set I)

We will call the sentences of 27, Set I. The procedure was carried out on three separate occasions a week apart using the first author's voice on the first and third occasions, and a Mexican-American researcher's voice on the second, giving respectively the overall impression of being subtly more English or Spanish. We expected that the second reading might have resulted in significantly more Spanish judgements, however no difference of this sort was found; if anything, slightly more English judgements were made upon hearing the Mexican-American reading.

We did find that the children generally had strong opinions concerning the predominant language of the sentence. Many reported that they said a sentence was mostly English if "most of the words are in English". However, the table in 28 shows that this is not a reliable metric for the majority, nor does a comparison of word counts account for individual children's responses.

28. (Set I)

Sentence	Judgements (Total)	Word Count
1	** 54% Span	Eng
2	*** 62% Eng	Eng
3	* 52% Eng	Eng
4	*** 73% Eng	Eng
5	* 54% Eng	Eng
6	*** 74% Span	Eng
7	** 56% Span	Eng
8	** 54% Span	Even
9	** 50% Even	Span
10	*** 77% Eng	Even

Rate of self-consistent judgements: * = low
** = medium
*** = high

Agreement among children who were self-consistent across the three trials was nearly perfect for sentences which produced a high rate of self-consistency, (cf. *** in 28). Note that sentences 2 and 4 (in 27) of set I both have Spanish main verbs, and yet they were judged as English most of the time. Where a moderate number of self-consistent judgements (**) for the three trials was observed, disagreement among children ran close to the probabilistic figure of 50%.

We feel that these ten sentences fall into three categories of code switching, and these divisions are reflected to a certain extent in the children's responses. See 29.

29. (Set I)

A. Unlikely code-switches: 3, 5
B. Possible code-changes: 1, 2, 7, 8, 10
C. Possible code-mixes: 4, 6, 9

Complex code-changes of the type used in Set I sentences 3 and 5 are just not observed in the discourse of these children, and they are classified as "unlikely code-switches" in 29-A. It is not surprising, therefore, that they generally elicit no consistent opinion concerning which language is being used, as indicated by the single asterisk (*) in 28. Additionally, as we have stated earlier, we feel that one cannot really say that English or Spanish is being spoken; rather both language systems are used when a code-change occurs.

Now category 29-B sentences all had a moderate rate of self-consistent judgements, (** in 28), with the exception of sentences 2 and 10; they both had a high rate, (*** in 28). Sentences of category 29-C had high rates of self-consistency (***) except for number 9 which had a moderate rate, (**).

The fact that categories 29-B and C are not exactly coincident with the moderate and high rates of self-consistency mentioned earlier reflects a further set of complicating factors. For example, in sentence 2 (Set I) and in sentence 10 we felt that focus may have played a role in the high level of agreement. We tried to determine which part of the sentences each child was focusing upon by asking during one of the trials, "What is this sentence about?" The results were ambiguous. Most children mentioned "radishes", for example, but so did the one child who consistently said that sentence 10 was Spanish. Both sentence 2 and 10 were rather heavily judged as English, despite the fact that one is a code-change to English, and the other to Spanish. We do not at present have a satisfying explanation for this, but we will propose at least one possible principle a bit later.

We devised a second set of sentences, some of which were based on the same types of switches we were investigating in the first set.

30. (Set II)

(1) Te gusta leer good history books or comic books?
(2) Look, my sister quiere cocinar these potatoes for lunch.
(3) Occasionally, when Juan is working, lee el periódico.
(4) I wrecked my car yesterday, y ya lo han arreglado.
(5) Alberto tiene hambre, but I don't.

(6) Mi amiga María se casó con my uncle's friend.
(7) Mira, my mother wants to cocinar these vegetables for supper.
(8) Te gusta leer magazines or books?
(9) Planté unos frijoles ayer, and they're already growing.
(10) De costumbre, cuando Jim está manejando, he goes really fast.

We were able to administer this set only once, and we obtained this data from only 12 children. Their judgements are represented by the percentages in 31.

31. (Set II)

Sentence	Judgements	Word Count
1	83% Eng	Eng
2	83% Eng	Eng
3	75% Eng	Eng
4	75% Span	Even
5	58% Eng	Even
6	66% Span	Span
7	66% Span	Eng
8	58% Eng	Even
9	50% Even	Even
10	58% Eng	Span

Compare Set II sentences 1 and 8 with Set I sentence 2.

32. II-1 Te gusta leer good history books or comic books?
II-8 Te gusta leer magazines or books?
I-2 Te gusta leer books about animals and plants?

All three produced a majority of English judgements, though the verb is Spanish in each case. However, note that the judgements are much closer to 50% for II-8 than for II-1. That is, the status of II-1 is a lot more clear-cut where its predominant language is concerned. It is likely that something on the order of simple word count prevails in judgements of code-changed sentences of this sort. In addition, the use of or instead of the Spanish o in II-1 and II-8 is a sign that the code has been changed. It is common to hear utterances such as "Te gusta leer magazines o books?", and we suspect this sentence to be Spanish with two noun code-mixes.

Compare Set II sentences 2 and 7 with Set I sentence 6.

33. II-2 Look, my sister quiere cocinar these potatoes for lunch.
II-7 Mira, my mother wants to cocinar these vegetables for supper.
I-6 Mira, my mother quiere cocinar these vegetables for supper.

The use of mira in II-7 and I-6, and the use of look in II-2 appear to correspond well with the children's judgements of the sentences as Spanish and English respectively. That is, the language in which the sentence is initiated seems to prevail in these cases.

Now compare Set II sentences 3 and 10 with Set I sentence 8.

34. II-3 Occasionally, when Juan is working, lee el periódico. (75% E)
II-10 De costumbre, cuando Jim está manejando, he goes really fast. (58% E)
I-8 Usually, when Juan is driving, anda muy rápido. (54% S)

If one attempts to relate the children's judgements to which language the sentence begins with, the results are contradictory. All one can really say concerning the apparent contradiction present in these judgements is that these sentences are not Spanish or English but both.

Again, in the following comparisons, the initial language of the utterance is not alone sufficient in predicting the childrens judgements, this time in coordinate sentences.

35. II-4 I wrecked my car yesterday, y ya lo han arreglado. (75% S)
II-9 Planté unos frijoles ayer, and they're already growing. (50% S/E)
I-10 I planted radishes yesterday, y ya están creciendo. (77% E)

We are convinced that some general principles must be statable to account for all of the data we have discussed. High rates of agreement among subjects where code-changed sentences are concerned may be due to a hierarchy of criteria which are all weighted differently or ordered etc. That is, language judgements, and so judgements of acceptability in discourse, may be "pulled" by various factors such as initiating language, portion of greatest length, focus and so forth. Cross-linguistic pronoun reference may also play a role. If explicit pronominal reference is made in the second clause (in terms of real time) to an NP in the first, the judgement seems to be "pulled" toward the language of this later reference. Lacking such explicit pronominal reference, the sentence is judged heavily as being in the language of the initial clause.

We emphasize that the preceding analysis is ad hoc and not at all sufficiently tested, yet we feel that principles of this sort may be worth considering when dealing with code-switched utterances.

We have attempted to refute the claim that code-switching among bilinguals proceeds in a random way. We have relied heavily upon data from children, though much of our discussion certainly relates to the discourse of adults. It is suggested in this paper that there are actually two kinds of code-switching: code-mixing and code-changing. The failure by many analysts to take this distinction into account may explain the apparent lack of organization in some bilingual data. Our claim that these two types of code-switching are distinct is supported by three different kinds of data:

(1) Different syntactic constraints governing the two types of switches.

(2) Differential frequency of two types in the data.

(3) Different response patterns with regard to what language a sentence is in, and differing ability to repeat sentences according to which type of switch was involved.

NOTES

[1]These percentages and those following are explained in the text.

[2]These two children are English dominant sisters. They changed the entire sentence of 8-C to English.

[3]We have observed a similar phenomenon among Thai speakers of English as a second language. They strip code-switched English nouns of their determiner and plural marker when using them in Thai: "Chán kɛ̂ɛ speaker lɛ́ɛw." (Lit.: I fix speaker PAST) This means "I fixed the speakers" (or "speaker") I am told that the use of the English determiner in Thai is unacceptable or foreign sounding, while the use of the plural marker can be the mark of a person who is very fluent in both English or Thai. (JW)

[4]For more information on self-translation see McClure and Wentz, 1975.

[5]dijir=decir Several dialectal forms of this sort are left unchanged in the data as we have presented it. When spelling departs from the norm to too great an extent, we have included the accepted spelling.

[6]It is difficult on the other hand to say why biblioteca was noticed by so few children. Roberto may have been perceived as the

proper form to use in English discourse, for the children often use Anglicized pronunciation of Spanish names in English.

[7]This was Susie H., one of the two English-dominant sisters, the younger (6 yrs), mentioned in note 2. Only English is spoken in their home.

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